

AIR QUALITY FORECAST ACCURACY (THROUGH AUGUST 31)

**Air Quality Subcommittee
September 20, 2019**

ACTION REQUESTED

No action requested. This item is for presentation and discussion.

- Air quality forecast accuracy (through August 31)

PREVIOUS ACTION

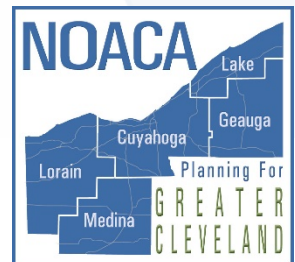
No Prior Action (Quarterly Update for Subcommittee)

BACKGROUND

NOACA forecasts daily peak eight-hour ground-level ozone concentrations and fine particulate matter concentrations.

- In 2019, daily forecasts for ozone began March 1 and will conclude October 31
- Daily forecasts for fine particulate matter are year-round

NOACA posts daily air quality forecasts through AirNowTech, in affiliation with the United States Environmental Protection Agency (U.S. EPA)



BACKGROUND

NOACA ground-level ozone and fine particulate matter forecasts based on a review of several meteorological variables and model guidance.

- National Oceanic & Atmospheric Administration (NOAA) National Air Quality Forecast Capability (ozone only).
- Classification and Regression Tree (CART) Model
- Sonoma Tech Guidance (via Columbus/Central Ohio Forecast on AirNow.gov)

BACKGROUND

NOACA Forecast Performance for 2019 (PM_{2.5}):

PM _{2.5} GOOD/MODERATE THRESHOLD (12 µg/m ³)		NOACA FORECAST	
		BELOW	ABOVE
OBSERVED	BELOW	35%	22%
	ABOVE	13%	30%
CORRECT = 65%			

BACKGROUND

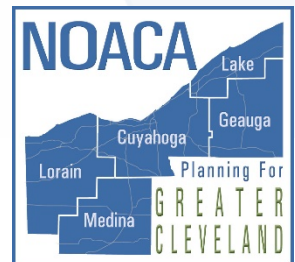
NOACA Forecast Performance for 2019 (PM_{2.5}):

PM _{2.5} MODERATE/UNHEALTHY THRESHOLD (35 µg/m ³)		NOACA FORECAST	
		BELOW	ABOVE
OBSERVED	BELOW	100%	0%
	ABOVE	0%	0%
CORRECT = 100%			

BACKGROUND

NOACA and NOAA Forecast Performance for 2019 (March 1-August 31) (O₃):

FORECAST		THRESHOLD	
		50ppb	70ppb
AGENCY	NOACA	80%	97%
	NOAA (6Z/12Z)	(82/82)%	(96/96)%



BACKGROUND

Exceedance Days for March-August, 2019 (O₃):

DATE	FORECAST CATEGORY		OBSERVED	
	NOAA	NOACA	PEAK (ppb)	# STATIONS
JUNE 27	2/3	2	3	2
JUNE 28	2/2	3	3	3
JUNE 29	2/1	2	3	1
JULY 10	2/3	3	3	5
JULY 13	1/2	2	3	3
AUGUST 4	2/2	2	3	1

AIR QUALITY INDEX	
CATEGORY	HEALTH CONCERN LEVEL
1	GOOD
2	MODERATE
3	UNHEALTHY FOR SENSITIVE GROUPS
4	UNHEALTHY
5	VERY UNHEALTHY
6	HAZARDOUS

BACKGROUND

NOAA versus NOACA Forecast Performance (O_3): Exceedance Days

- “Missed Opportunities” – Three (3) days both NOAA and NOACA did not forecast observed categorical Exceedance of 2015 8-hour ozone standard (70ppb); One (1) day NOACA only missed; one (1) day NOAA only missed
- “False Alarms” – Four (4) days NOAA forecasted categorical Exceedance of 2015 8-hour standard (70ppb) when observed concentrations did not exceed (NOACA had two (2)).



NEXT STEPS

- Track forecast performance of NOACA and NOAA for ozone; NOACA only for fine particulate matter
- Collaborate with NOAA personnel to report model performance in Northeast Ohio (October 9-10 Air Quality Forecasters Workshop)
- Update Air Quality Subcommittee in December



NOACA will **STRENGTHEN** regional cohesion, **PRESERVE** existing infrastructure, and **BUILD** a sustainable multimodal transportation system to **SUPPORT** economic development and **ENHANCE** quality of life in Northeast Ohio.

